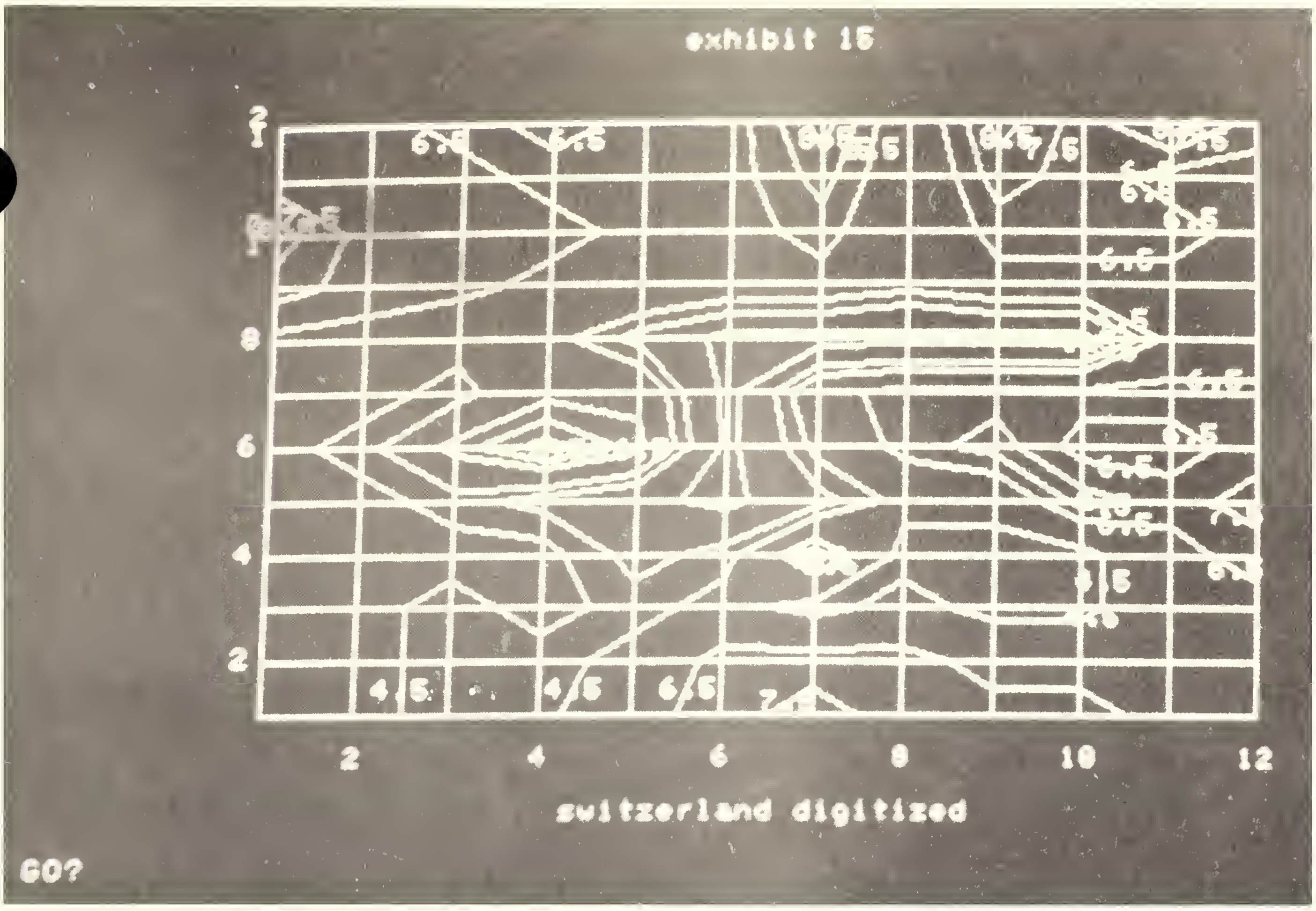

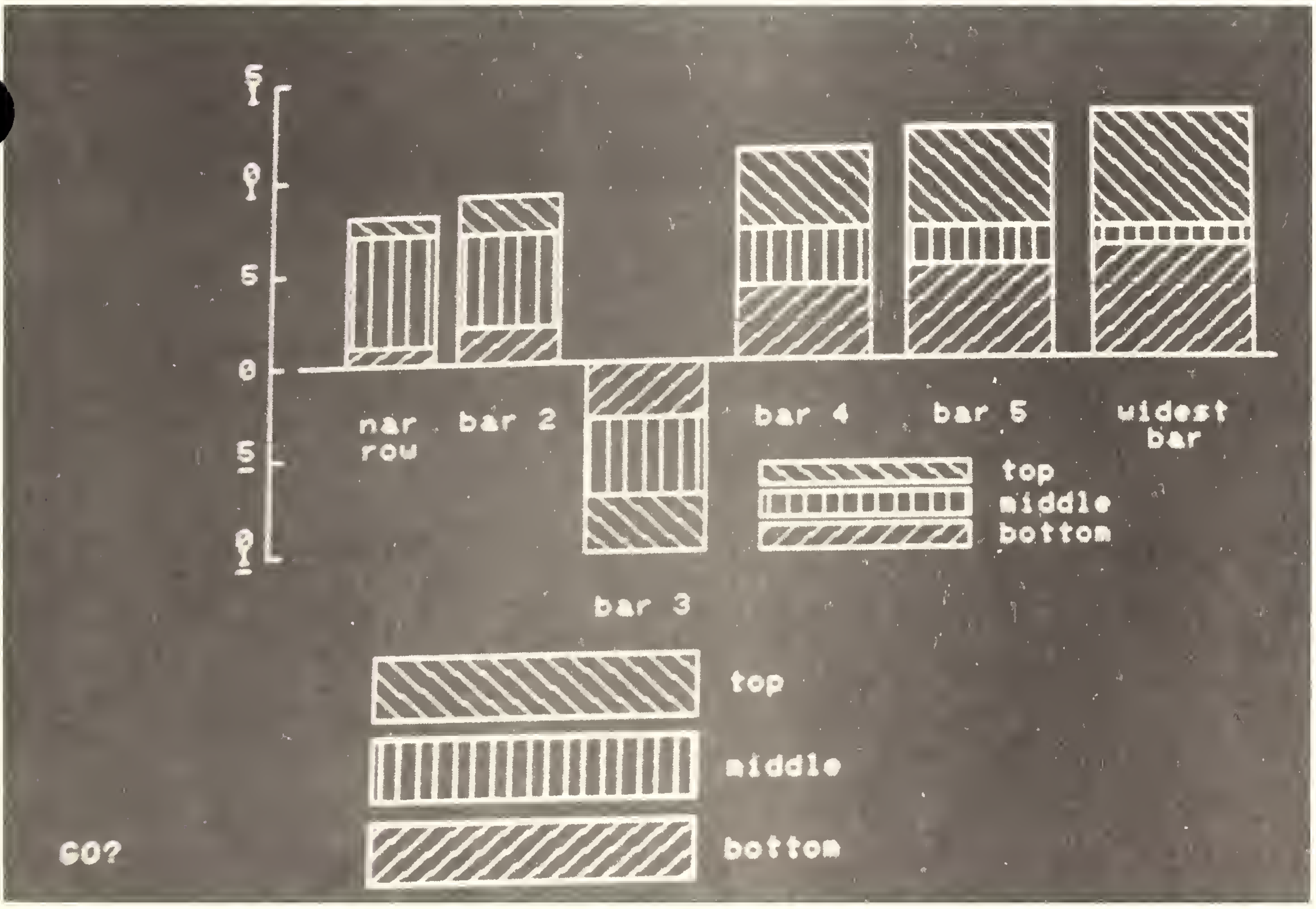

COMPUTER NEWS

University of Toronto

July 79 ISSN 0315-4661 No. 171

COMPUTERNEWS is a monthly publication produced by University of Toronto Computing Services. Subscription changes should be directed to the Information Office, Engineering Annex, room 206 or (416)-978-4990. Enquiries or contributions should be directed to the Editor, Janet Barr or the Assistant Editor, Cathy Gillevet in the Engineering Annex, room 206 or (416)-978-2066. Layout and typesetting are provided by Kathryn Bourne.

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Janet Barr, Editor

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THE STATISTICAL CONSULTING SERVICE

The Statistical Consulting Service began as a branch of the Institute for Applied Statistics under the direction of the late Professor John Ogilvie. The original service was established with the support of the University of Toronto. In 1978, the activities of the Institute were merged with those of the newly created Department of Statistics, and in August of last year the Statistical Consulting Service reopened in the Sidney Smith building, Room 5026. The Service, which is offered by the Department of Statistics in co-operation with UTCS, was established as a non-profit but self-supporting operation.

The Statistical Consulting Service provides expert help to persons with projects requiring statistical analysis. Interested graduate students and faculty are available for consultation on any aspect related to such projects, from initial planning, to data collection, to the final analysis of the data. Projects are welcome at any stage.

The staff of the Statistical Consulting Service consists of persons of varied interests and backgrounds. The Service's programmer, Lillian Lapczak, is very experienced in the use of statistical software. As well as supervising the implementation and development of the software on the new PDP 11/70 recently installed for use by the Service, Lillian provides programming assistance and advice.

Two graduate students, Joyce Bernstein and Daniel Stripinis, have been manning the office every afternoon since the Service opened. In addition to their statistical backgrounds, Joyce has a Master's degree in epidemiology and Daniel in criminology. They deal with the routine problems that come into the Service, as well as handling other larger projects. Other graduate students participate in any of the larger projects which they find of interest. Thus, the Service is able to take advantage of the varied backgrounds of the participating graduate students, which range from psychology to mathematics.

The faculty members of the Department of Statistics are also heavily involved in the Consulting Service. Four faculty members, David Andrews, Andrey Feuerverger, Irwin Guttman, and Ralph Wormleighton, are associated with the Service this year. One of the above is always available should a higher level of expertise be required. As well, these and other faculty members may work on projects of particular interest or complexity, and supervise large projects. The combined expertise of the faculty includes specialists in robust techniques, sample surveys, experimental design, time series analysis, probability series, multivariate analysis, linear models, and many other areas of statistics.

The formal link between the Statistical Consulting Service and UTCS is provided by Naomi Altman, who recently joined UTCS and is working in the Customer Services Group. Naomi recently graduated from the Department of Statistics,

cont'd...

STATISTICAL CONSULTING cont'd

where she participated in consulting work. As well, Naomi taught one of the large introductory courses in statistics. She has several years of programming experience, including one year of working for DATATALK. Naomi is currently involved in co-ordinating statistical projects and giving non-credit courses in the use of statistical software. As well, Naomi consults with and advises users with problems of a statistical nature.

Some new hardware devices have been installed for use by the Statistical Consulting Service. A PDP 11/70 Processor with fast floating point,256K byte memory and a 176M byte disk has been installed. This machine was selected because of its potential for interactive statistical analysis and graphical display. It will be connected to the IBM 3033 Processor and the DECsystem-10.

A number of peripheral devices connected to the PDP 11/70 are located in the Department of Statistics. An HP2648A high speed screen type terminal is available for interactive analysis, including graphic displays. A GT 41, a very high speed screen can be used for dynamic displays. The Varian printer/plotter is a hardcopy terminal that can produce high resolution plots, and thus eliminates the need for CALCOMP plotting for most projects. Other screens and hardcopy interactive terminals are available for programming and standard applications.

A variety of software is available on the PDP 11/70. The PDP 11/70 runs the UNIX operating system. The system supports FORTRAN, and a subroutine library, similar to WATLIB on the IBM 3033 Processor, is currently being put up. The system also supports ISP, an interactive statistics package recently developed at Princeton. GLIM3, an update of GLIM, is also available on the system. GLIM3 is a powerful tool for the analysis of generalized linear models. C is a simple but powerful language suited for use on the 11/70. At this point, it should be mentioned that the contribution of Allen McIntosh has significantly influenced the development of the statistical software.

In addition to the numerical and statistical software, text editing and photo-typesetting facilities are also available with the PDP 11/70. UTCS is heavily involved in this aspect of the system. This system will have the capablity of producing high quality text with mathematical notation.

Currently, a comprehensive graphics package is also being developed for use on the system.

In the ten months since the Consulting Service began operation in the Department of Statistics, over 200 projects have been completed, projects which have come in from practically every faculty and college in the University, as well as from affiliated teaching hospitals.

Dr. Percy, from Sick Childrens' Hospital, is investigating possible procedures for detecting Muscular Dystrophy carriers. The Statistical Consulting Service has helped Dr. Percy organize the data collection,

cont'd...

STATISTICAL CONSULTING cont'd

and is currently studying the effects of some associated variables on the measurements of interest.

Dr. Gibson, from the Royal Ontario Museum, is studying genetic variation in birds over several locations. The Statistical Consulting Service is advising him on the use of recently developed techniques in multivariate analysis. Statisticians from outside the Department of Statistics have participated in the discussion of this project. Mr. Minkin, a graduate student in the Department of Statistics, has been the main consultant for Dr. Gibson's project.

Dr. Clarke, from the Department of Surgery, was studying the effects of time between two particular surgical procedures on the survival time of the 'patients' (rats). The Statistical Consulting Service became involved in the project at the design stage of the experiment, which involved 180 operations over a two week period. The data from the completed experiment was analyzed by Ms. Stukel, a graduate student in the Department of Statistics, under the supervision of a faculty member. The analysis involved the use of a linear logistic model, which was fit using GLIM3 on the PDP 11/70.

Projects handled by the Statistical Consulting Service have ranged from the large, complex projects described above to much simpler problems in experimental and sample survey design, or analysis of collected data. Many small projects require just an hour or two of consultation with Joyce or Daniel.

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STATISTICAL CONSULTING cont'd

The Statistical Consulting Service welcomes your queries. The Service is open from 1:00 p.m. to 4:00 p.m. during July and August, and from 1:00 p.m. to 5:00 p.m. during the school term. Naomi Altman can be contacted from 9:00 a.m. to 5:00 p.m. (4:30 p.m. during summer hours) at UTCS. The numbers to call are:

Statistical Consulting Service	978-4455
Naomi Altman	978-6133

Naomi Altman

SPRING/'79 DECSYSTEM-10/20 DECUS CONFERENCE REPORT

The seventh Spring DECsystem-10/20 Digital Equipment Corporation User Society (DECUS) Conference was held in Atlanta, Georgia, from June 5 to June 8. Several hundred users of Digital's line of 36-bit computers as well as a large number of DEC representatives were present during the four days of the conference.

Because the interests of DECsystem-10/20 users are so wide ranging, it was frequently necessary to schedule four simultaneous sessions. Since this made it impossible to cover more than a few of the meetings, this report will concentrate on a few major topics of general interest, such as monitor development, languages and utilities.

The mood in Atlanta was decidedly more favourable toward DEC than it had been at the Fall 1978 DECUS in San Francisco. Many of the problems and schedule delays which existed then seem to have been resolved. For example, the first maintenance update of the 6.03 monitor has been in the field for several months and the next major release is already in field test. Also, several languages, such as FORTRAN and APLSF, which were previously somewhat troublesome, appear to have stabilized.

Why this shift in attitude occurred can be illustrated by describing some of the new developments in Digital's RAMP project. "RAMP" is DEC's acronym for Reliability, Availability, Maintainability and Performance. In San Francisco, this seemed like little more than the "pie-in-the-sky" kind of buzzword used by all vendors. By the time of the Atlanta conference, however, several aspects of the RAMP project had been concretized, with the result that the project seems more meaningful now than it had in the past. The RAMP project will be mentioned several times throughout this report.

Operating System Developments

For several years, TOPS-10 has been undergoing extensive revisions aimed at producing what DEC referred to as the 7.01 monitor. In Atlanta, DEC announced that 7.01 will actually become three separate monitor releases spread over the next year. These have been named 7.00, 7.01 and 7.02.

The 7.00 monitor will represent the culmination of DEC's effort over the past several years

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SPRING/'79 DECUS REPORT cont'd

to provide an SMP (Symmetric MultiProcessing) operating system for their KI-10 and KL-10 based systems. This will replace the Master-Slave organization which suffers from excessive overhead much of which is due to the lack of monitor re-entrancy. To a large extent, the design of the 7.00 monitor addresses just this problem, and apparently with a great deal of success. It has been in field test since March and has received excellent reviews. It will be shipped to dual KL-10 sites only sometime around August, 1979. (The UTCS system, of course, includes only a single processor.)

In addition to supporting SMP, a major effort was made to improve performance generally by implementing various techniques involving cache memory management, a queued I/O protocol, the redefinitions of several monitor resource interlocks, and the removal of all code required by the KA-10 processor (which becomes officially unsupported as of the 7.00 monitor release). One field test site reported that, according to their measurements, response time was improved by a factor of two when the 7.00 monitor was installed.

Although the major emphasis in the design of the 7.00 monitor has been the development of SMP, the monitor also provides additional functionality, which many users will find very attractive. Included are the following features:

1. A terminal characteristics command.
2. Several features intended specifically for video terminals, such as enhancing control-H (backspace) so that it will actually erase the character on the screen and introducing control-W (backspace word) which will erase an entire character sequence back to the previous delimiter.
3. A page size command.
4. Increasing the number of I/O software channels available from 16 to 80 for programs using the "FILOP." monitor call.
5. Making SAVE, GET and RUN work with SFDs.
6. Vastly increasing the size of TMPCOR files.
7. Allowing users to create their own temporary search list, which can be a list of privately defined ersatz devices consisting of arbitrary strings of structures, PPNs, and SFDs.

TOPS-10, Version 7.01

Most of the performance improvements associated with the implementation of SMP and all of the increased functionality of the 7.00 monitor will also be available to single processor installations such as UTCS with the 7.01 release. It is scheduled to be released in May 1980, although it is thought that this could occur as much as two or three months earlier. There are a few features which are not part of 7.00, but which will appear in 7.01. These include:

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SPRING/'79 DECUS REPORT cont'd

1. The first phase of the RAMP project.
2. An upgrade to the IBM link so that it will emulate a HASP multileaving work station instead of a 3780.
3. Version 4 of the GALAXY batch subsystem including ORION (a new operator interface) and IBMSPL (a new spooler for the IBM link).
4. PULSAR (a magnetic tape label processor).

The main user observable feature of the RAMP project is related to the system dump which will occur for each "continuable" crash. At present, if the monitor detects that the data base for a single user is corrupted, that job is "crashed", but the system as a whole continues. Since the state of the system is lost, it is almost impossible to trace the problem and fix the bug that caused the crash. Under 7.01, the system will continue only after it takes a dump which can be analyzed later. Most users will observe nothing more than several seconds without response followed by a resumption of normal operation.

A second feature of the RAMP project is the system's ability to record enough information about its state at the time of a hardware crash to enable a field service engineer to identify the cause of the problem, even if it is intermittent. It is possible that a defect might be fixed after only one or two such crashes.

TOPS-10, Version 7.02

The release of the version following 7.01 is presently scheduled for August, 1980, although it too may appear somewhat sooner. 7.02's main enhancement is also associated with the RAMP project, namely "system sleep/warm restart". This feature addresses the problem of how to gracefully remove a piece of defective hardware without having to crash the system. For example, if a disk drive containing part of a public structure begins to fail, it will be possible to "put the system to sleep" temporarily, reconfigure the hardware, and proceed with no loss of continuity. The reconfiguration might even include turning off system power and making hardware changes before resuming operations. In any event, whether the system is down for a few minutes or many hours, each job will still exist and may continue as if nothing had happened.

User Software

In general, throughout the conference user software took a back seat to monitor developments. However, several sessions were devoted to the subject and a number of interesting items are worth reporting.

There are no new utilities scheduled for release as part of or in parallel to the 7-series monitors. One utility which the DECUS delegates called for very strongly was the PATH program, a program which is used in-house at Digital to give users direct control over the user-defined ersatz device feature of the new monitor. Another item high on the DECUS wish list is a disk utility which can be used for general user

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SPRING/'79 DECUS REPORT cont'd

file manipulation as well as by system support staff to repair damaged file structures when the need arises.

Maintenance releases of several important supported utilities are presently in field test and should be available in September, 1979. Included in this group are PIP (file transfer program), MACRO (the DECsystem-10 Assembler) and LINK (the linking loader).

Language development seems to have stabilized a great deal since the San Francisco conference. Digital does not presently expect to support any new languages on the DECsystem-10. However, maintenance and/or development will continue on those already supported. For example, although no new development or maintenance release of CPL or ALGOL-60 is planned, bug fixes will continue to be published when appropriate. On the other hand, a maintenance release of COBOL (version 12A) is now being field tested and should be released in the near future.

FORTRAN, the language which users were experiencing the most difficulties with at the time of the Fall DECUS, now seems to be in fairly good shape. Version 6 is scheduled to go into field test in October, 1979 and to be released generally the following February. The main emphasis will be on laying the groundwork for supporting FORTRAN-78 (the new ANSI standard) in later releases. However, there will be some additional functionality, such as new OPEN arguments, increased use of the ERR= contruction, and additional format descriptors.

The address space available to very large FORTRAN programs will be increased by changing the location of FOROTS, the sharable high segment runtime system. Also, the mathematical library is being completely rewritten in answer to long standing complaints about its lack of accuracy.

Later versions of FORTRAN (each new release follows its predecessor by about 18 months) will continue the move toward the 1978 standard. Version 7 will conform at the subset level when not optimized; version 10 will fully conform, even when optimized.

Future DECUS Conferences

This DECsystem-10/20 symposium is scheduled to be the last held independent of the DECUS mini/midi users. Beginning with the San Diego meeting next fall (December 10-13, 1979) and continuing next Spring in Chicago (April 21-24, 1980) all DECUS conferences will include the users of Digital's smaller computers, such as the PDP-11, PDP-8 and VAX-11/780, as well as the larger mainframes.

After attending each of the last two DECsystem-10/20 DECUS conferences, the author has concluded that there are two ways in which the conferences can be especially valuable. First, information useful for future planning can be obtained at the conferences earlier than from any other source. Sometimes an announcement of interest is made publically or possibly at a session with restricted attendance. Just as often, however, a conversation in the hallway may prove to be equally informative. Second, it is

cont'd...

SPRING/'79 DECUS REPORT cont'd

the only opportunity for DEC's customers to collectively express their opinions about DEC's future plans while there is still a chance to have an effect on them.

Of course, much more occurred at the conference than it is possible to describe here. Anyone with a particular interest in a topic which has been omitted is invited to call Edmund West at 978-4085. All such calls are welcome.

Edmund West

STATUTORY HOLIDAYS/SUMMER HOURS

The following hours of service will be in effect during the Civic Holiday.

	Aug. 4 (Saturday)	Aug. 5 (Sunday)	Aug. 6 (Monday)
IBM 3033	08:00-20:00	08:00-20:00	closed
S/370-165-II	08:00-20:00*	08:00-20:00*	unattended
DEC 1090	unattended	unattended	unattended

*Running unattended outside these hours.

Normal hours of service for all systems will resume Tuesday, August 7.

All users are reminded that summer hours for all eligible University of Toronto staff members will commence on Tuesday, July 3 and regular hours will resume on Tuesday, September 4. During the summer hours, UTCS offices will close at 4:30 p.m. Monday to Friday.

MANUAL ORDERING FOR FALL COURSES

Instructors intending to recommend computer manuals for fall courses should notify Computing Services at least six weeks in advance so that adequate stock can be ordered.

Please direct your requests, in writing, to Dawne Smith, Information Office, Room 206, Engineering Annex. The request should include the manual title, order number and required quantity.

Dawne Smith

THE COMPAKTOR PROGRAM

The phenomenal increase in the use of disk packs has created many problems not found with other devices. Most of these problems are due to the necessarily unpredictable nature in which space is allocated by users.

After repeated allocations and deallocations of space, the disk pack becomes fragmented; there are many small, non-contiguous areas of free space spread haphazardly throughout the volume. This frequently means that new space requests on that disk must be satisfied by two or more non-contiguous free areas. On the IBM system, most new datasets must be satisfied in five or less

cont'd...

THE COMPAKTOR PROGRAM cont'd

'extents' so that it is quite possible that a user's request for space be denied despite the apparent available amount because all the available space is fragmented.

As use of disk space increases, not only does the free space get spread out, but so does each user's datasets. Either through natural growth or because of inaccurate space estimates, datasets tend to grow beyond their originally allocated space (known as the 'primary extent' to IBM users). The new space given to such datasets rarely lies near the original. Thus, the dataset becomes scattered on the disk surface. For users of the IBM system, there is a maximum of 16 such extents. This means that datasets may have to be copied to new larger ones if they exceed this number.

In order to service the phenomenal increase in requirements made on disks, the method of allocating space has been simplified so that users rarely need concern themselves with where on the disk surface their data actually resides. This lack of control has an effect on dataset location and it frequently happens that the most active datasets on a disk pack may be at opposite ends of the disk surface. This can lead to excessive movement of the arm which reads and writes the magnetic disk surface and thereby slows down the Input/Output processes. The subsequent deterioration of system performance leads to degraded total system throughput and slow response for our interactive users.

In order to solve these and other problems associated with disk use, the system programmers for the IBM computer use the Compaktor program product. Compaktor, available at a fee from a reliable vender, is used in disk 'reorganization.'

Compaktor reduces free space fragmention by moving all datasets forward on the disk pack, leaving one large area of free space. In doing so, Compaktor must be careful to go around certain datasets which are regarded as 'unmoveable.'

As it moves datasets, Compaktor merges dataset extents into one single extent. This gets rid of multi-extent datasets, where possible.

Compaktor provides accurate control over positioning of datasets, both by name and by groups. Thus, UTCS can place certain high activity datasets close together and nearer the edge or center of the disk surface.

Recently, it was decided that another of the infrequent but necessary runs of the Compaktor program was required for the USER volumes on the IBM Academic System. Compaktor was told to recover fragmented free space; the result was the one large free space extent where before there were hundreds of small (some no larger then a track) extents. Compaktor was also told to reduce dataset fragmentation; the result was that most user datasets were reduced to one contiguous extent. This may have saved some users the need to move their dataset to a larger one because of extra growth. As well, it should have improved access

cont'd...

THE COMPAKTOR PROGRAM cont'd

times for most users who had multi-extent datasets. Compaktor was also told how to position certain datasets. These datasets were pointed out by Michael Wagner, a member of the Systems Group who looks after performance on the IBM machines. Using special programs, Michael decided which datasets were of high activity. Most were system datasets, such as 'Paging Spaces.' Compaktor placed these datasets in optimal positions for improvement of performance. Compaktor also did other things; for example it reorganized the VTOC, which is the directory of datasets found on each disk pack.

Compaktor can also do some things which we have decided not to allow it to do. For example, Compaktor could release unused space in each dataset. However, UTCS expects each user to allocate the amount of space needed and then to release it using a utility available to batch and interactive users. Compaktor did point out, however, that had it been permitted to release unused but allocated space that many tracks could have been reclaimed; this illustrates that some of our users are not doing their part in disk space maintenance and, as a result, are paying more than they need to.

Overall, our experience with Compaktor is encouraging. System performance can be improved, disk space can be better utilized, and users' datasets can be better organized. The better utilization of system resources leads to cheaper and more efficient computing for all users.

Alex Nishri

LOADER RES/NORES DEFAULT CHANGED

The RES default for the IBM loader directs the program to search the system link pack area after processing any SYSLIN (SYSIN) DD statements and before searching the SYSLIB statement. The system link pack area is an area in computer memory which contains many commonly accessed modules of the system. As a result of the RES default, several users who were attempting to access their own subroutines were instead obtaining similarly named modules from the link pack area. For example, in one instance a user called his own COPY command but, as a result of the RES default, the user received the TSO Copy command. Consequently the user's job failed.

Instances such as the one cited above rarely occur. However, when they do, the problem is difficult to diagnose. This problem has been resolved by changing the RES default for the loader to NORES. As such, the program no longer automatically searches the link pack area.

Herb Kugel

OBS/WYLBUR USER'S GUIDE NOW AVAILABLE

Users of OBS/WYLBUR at UTCS will be interested to know that the

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OBS/WYLBUR USER'S GUIDE cont'd

OBS/WYLBUR User's Guide is now stored online on the 3033, and is therefore available for printing or examination. This document, which was originally prepared by OBS and then was subsequently expanded by UTCS, is designed to introduce WYLBUR to a new user. The publication describes how to use the WYLBUR editor to enter and correct text, how to use the WYLBUR JES interface to submit and retrieve Batch jobs, and how to use parts of the WYLBUR Public Library to maintain online datasets. Coupled with the OBS/WYLBUR Reference Manual (available from the Information Office, Room 206, Engineering Annex), the Guide provides a complete documentation base for WYLBUR at UTCS.

WYLBUR users may acquire a copy of the User's Guide by executing the public execfile WYLMN. This execfile will cause WYLBUR to build a job which will list the Guide at any one of the high speed printers linked to the IBM 3033 Processor.

The following is an example showing what the user should enter in order to get his own copy of the manual. Note that the WYLBUR responses are shown in upper-case, and the user's responses are shown in lower-case.

```
COMMAND? clear active
COMMAND? exec from $wyl.lib#wylmn
-- THIS EXECFILE PRINTS A COPY OF THE OBS/WYLBUR
-- USER'S GUIDE ON A HIGH-SPEED PRINTER
TYPE IN '?' IN ANSWER TO A PROMPT IF YOU WANT MORE INFO
PGMR NAME? john doe
DESTINATION?
FORM?
PRIORITY?
JOB 1234 W0999967 SUBMITTED
COMMAND?
```

The above example shows a user "W09999" using EXEC file WYLMN to generate a copy of the Guide. The EXEC file asked the user for a Programmer Name which would be used for filing output -- in this case the name "JOHN DOE" was given. If, in response to the prompt for Destination, Forms code and Job Priority, the user only enters a Carriage Return, the system will route the output to the CENTRAL printer at EAT and the job will print on special form 2009 at priority 6.

Users of the IBM 3033 Batch service who are not currently using WYLBUR may also be interested in acquiring a copy of the WYLBUR User's Guide. Copies can be obtained through GPJS by running the following General Purpose Job Stream procedure:

```
// EXEC WYLMN
```

The output generated by this procedure should be routed to the CENTRAL printer and will produce a copy of the manual on 8.5 by 11 inch paper (UTCS form 2009). The user should allow for 5000 lines of printing.

Any questions, problems, or comments regarding the Guide, the public EXEC file WYLMN, or the Catalogued Procedure WYLMN should be directed to John Bradley, UTCS, 978-3995.

John Bradley

SPSS RELEASE 8.0 IS HERE

In mid-June, release 8.0 of SPSS (Statistical Package for Social Sciences) was installed on the IBM 3033 Processor. Both version H (500 variables) and version M (1000 variables) were installed. This release is intended to be upward compatible, so many users probably have not noticed that they have been using release 8. The older releases, 7.2 and 8A (a test release), are now no longer supported, but are available for a limited time through special arrangement by calling John Roth at 978-6878.

With this release comes a new manual which replaces the current Release 7.0 update manual and the Release 8A update manual. Copies are available at the Information Office, Room 206, Engineering Annex.

Some of the highlights of release 8.0 are:

1. REPORT - a new report generating the procedure for formatting and labelling case listings and aggregate statistics.
2. SURVIVAL - life tables, graphs of survival functions, etc. (was available in release 8A).
3. DISCRIMINANT - rewritten to implement all the specifications in release 6, plus several added features.
4. SORT CASES - now can be done anytime, and subfiles can be redefined many times in the same job.
5. Extended input and data modification facilities - N OF CASES UNKNOWN with INPUT MEDIUM CARD, date manipulation, etc.

Users with questions or problems should call John Roth at 978-6878.

John Roth

PERSONNEL CHANGES

Patrick Loh will be joining UTCS as a member of the Systems Group. Patrick's previous position was with Bell Canada as an Application System Assistant.

Dan-Lo Kao is a new programmer in the Systems Group. Before coming to UTCS, she was a Data Analyst Programmer for the Appalachian Education Satellite Program at the University of Kentucky.

Steven Chesney is a new Computer Operator in the Academic Computing Services Group and will be working at the Engineering Annex Terminal (EAT). Steven was previously with Canadian Pacific Railway.

Elizabeth Weitmann has joined UTCS as a Clerk/Typist and will be working part-time at the Annex and part-time at 49 St. George. Before joining UTCS, Elizabeth worked for a Canadian Magazine ("The Critical List") as a

cont'd...

PERSONNEL CHANGES cont'd

Receptionist/Secretary.

Naomi Altman has joined the Services Support Group as a Statistical Advisor. Previously, Naomi lectured in the Department of Statistics and was involved with the Statistical Consulting Service. She also worked for the DATATALK service until its termination last August.

Michael Afheldt is the newest member of the Communications and Small Systems Group. Michael previously was an employee of the University of Waterloo.

Theresa Kusy is the new Communications and Small Systems Clerk/Typist. She was previously a Clerical Assistant at the University of Waterloo.

Glen Bethanis is a new programmer in the Contract Programming Group. Glen comes to UTCS from the University of Toronto's Faculty of Library Science where he was employed as a Computer Operator.

Jill Reece, the Computing Service Representative (CSR) for the EAT/EUT terminals, will be leaving UTCS at the end of June. Jill has worked at UTCS for almost three years. She initially worked at AST/ASUT as the Computing Co-ordinator. Subsequently, she moved to CRF, (now CSS), where she was employed as a Systems Programmer, working with PDP-11 systems.

Jill is leaving to take an extended holiday before returning to the computing field. She plans to spend the summer camping and the fall on an African safari. We have enjoyed having Jill at UTCS and wish her luck in her future endeavours.

Vicki Little

RECENT ACQUISITIONS IN THE DEPARTMENT OF COMPUTER SCIENCE LIBRARY

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Informatik: eine einführence Übersicht.
Berlin, Springer-Verlag, 1971.
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New York, McGraw-Hill, 1979.

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Providence, R.I., American Mathematical
Society, 1978.

UTCS SYSTEMS

3033 PROCESSOR

- located in McLennan Physical Laboratories
- provides General Purpose Job Stream, High Speed Job Stream, TSO, WYLBUR
- 6 megabytes of memory
- MVS with JES2

SYSTEM/370 MODEL 165-II

- located in McLennan Physical Laboratories
- provides APL and ATS services
- 4 megabytes of memory
- OS/MVT with APL and ATS

3031 PROCESSOR

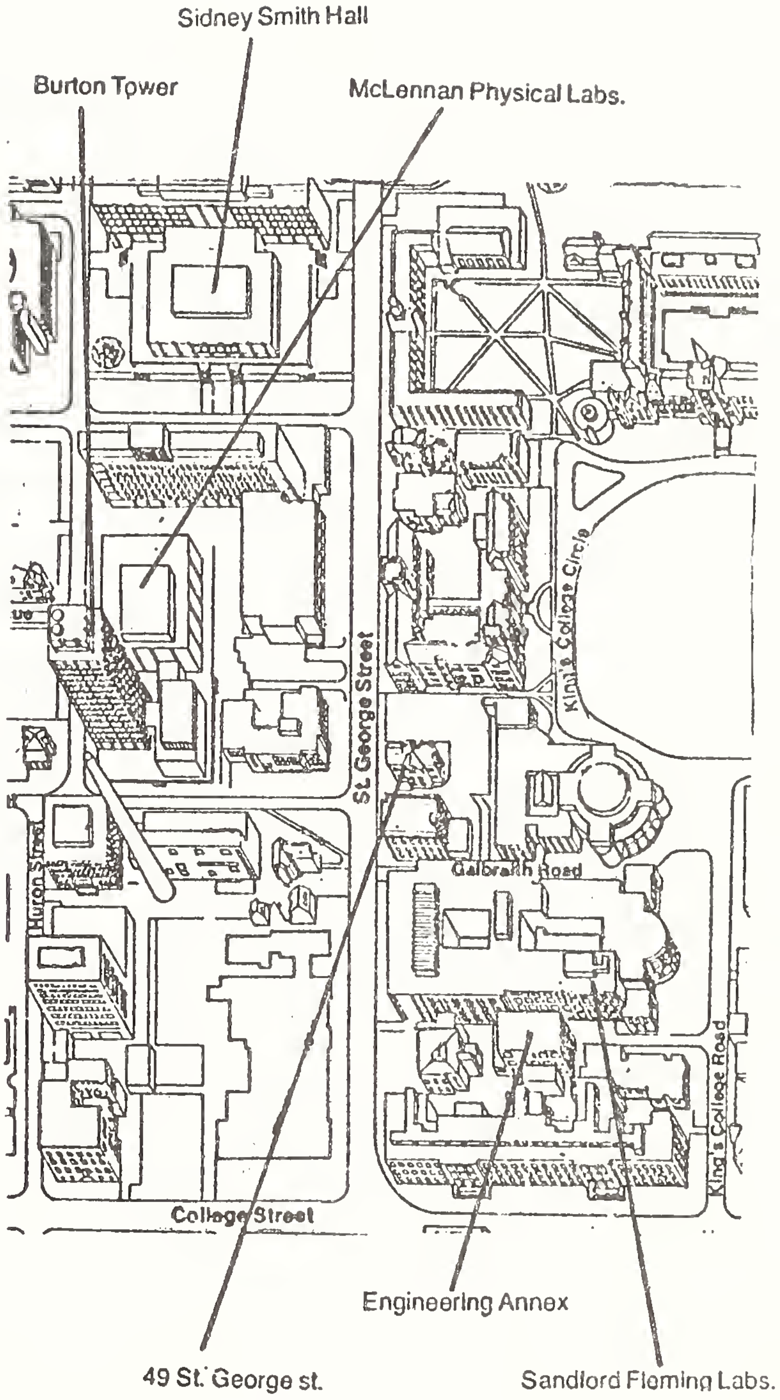
- located in McLennan Physical Laboratories
- provides administrative IMS/VS DB/DC Batch and TSO services
- 6 megabytes of memory
- MVS with JES2

DECSYSTEM 1090

- provides General Purpose Time-Sharing
- 256k - 36 bit words of memory
- TOPS10 operating system

COMMUNICATIONS & SMALL SYSTEMS

- located in SF207/SF109/112
- DEC GT44 System with PDP-11/40 CPU
- DEC GT40 System with PDP-11/05 CPU
- provides specialized graphics and inter-active graphics
- provides on-line and real-time computing services, data acquisition and minicomputer services



UTCS DIRECTORY

POSITION	ROOM	CENTREX PHONE NUMBER
DIRECTOR		
Dr. Doron Cohen	ML350	8948
ASSOCIATE DIRECTORS		
Rein Mikkor	ML350	5058
Al Heyworth	ML350	4936
FACULTY LIAISON OFFICER		
Dr. Frank Spitzer	ML350	4619
MANAGER, COMMUNICATIONS AND SMALL SYSTEMS		
Eugene Siciunas	ML350	4967
MANAGER, OPERATIONS		
Derry Cox	ML350	7092
MANAGER, SYSTEMS		
Ward Beattie	ML350	3579
MANAGER, ACADEMIC COMPUTING SERVICES		
Ralph Lombardi	ML350	7130
MANAGER, ADMINISTRATIVE COMPUTING SERVICES		
Walter Berndl	ML350	7331
MANAGER, SERVICES SUPPORT		
Don Gibson	ML350	5568
ADMINISTRATIVE OFFICER		
Suzan Fawcett	ML350	4428
INFORMATION & ACCOUNTING OFFICE		
General Inquiries	EA206	4990
ACCOUNTS		
Merton Hunte (U of T)	EA206	8702
Sylvia May (External)	EA206	7148
SUPERVISOR, ACCOUNTING & INFORMATION SERVICES		
Marg Doherty	EA209	3960
ACCESS CODES		
Agatha Stevens	EA206	8703

SUPERVISOR, APPLICATIONS

Herb Kugel	SG304	7286

COMPUTING SERVICES REPRESENTATIVES

Engineering Annex Terminal		
Jill Reece	EA203A	4357
Program Advisors	EA103	
Time-Sharing Support		
TS Advisors	SG204	6465
Mark Tapia	SG204	7109
Erindale		
Paul Shindman		828-5311
Scarborough		
Ihor Prociuk		284-3173
Arts and Science		
Sue Chong	SS2133	6509
New Physics		
Bob Chambers	ML1202	8823

SUPERVISORS, OPERATIONS

Paul Scarborough (IBM 3033-IBM 165)	ML335	6220
Krishna Patnaik (DEC 1090)	SF106	4086
Dave Wong (IBM 3031)	ML335	6846

KEY:

EA = Engineering Annex
SG = 49 St. George
ML = McLennan Physical Laboratories (New Physics)
SF = Sandford Fleming
SS = Sydney Smith

JOB AND SYSTEM STATUS QUERIES

SYSTEM/3033,TSO	7373
ATS/APL	6234
2741 TERMINAL MALFUNCTIONS	7107

TIME-SHARING SERVICES	DIAL-UP
APL,ATS	7200 CENTREX 7201 NON CENTREX
TSO,WYLBUR	6200 CENTREX 6201 NON CENTREX
DEC 10 SERVICES	4224 CENTREX 4244 NON CENTEEX
PHONE-IN ADVISING	6465

University of Toronto
Computing Services
Toronto, Canada